ABSTRACT OF THE DISCLOSURE

[1061]   An exemplary CAD design flow modifies an existing large scale chip layout to reinforce the redundant via design rules to improve the yield and reliability. The flow operates on each metal-via pair from bottom up to locate and correct isolated via rule violations by adding metal features and vias in a respective patch cell associated with each cluster cell. A large complex design is thus divided into cells so that multiple processes can work concurrently as if every process were working on the top level of the design layout.